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Cross Sectional Assessment of Patients Satisfaction with Rubber Dam Assisted Root Canal Treatments: A Questionnaire Based Original Study

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ABSTRACT

Background: The relative efficiency of root canal treatment and their criteria of success have chiefly been measured in terms of related clinical outcome. This study was conducted to evaluate the satisfaction levels with rubber dam usage during root canal treatment among institutionalized patients in northern Indian region.

Materials & Methods: Total 50 patients those visiting for root canal treatments were selected from department OPD. Demographic details were recorded for every patient in detail. A preformed questionnaire containing 8 questions about the satisfaction levels with rubber dam during root canal treatment was provided to patients in their last visit of root canal treatments. This study comprised of patients who truthfully responded to this questionnaire. Responses were recorded and data was processed statistically to estimate overall satisfaction level.

Results: Statistical evaluation using statistical software Statistical Package for the Social Sciences (SPSS). The resultant data was subjected to suitable statistical tests to draw concrete inferences. For the ease of categorization and analysis, patients were divided in 6 groups according to their age ranges. The measured p value was significant for group 3. Results showed that 33 patients were satisfied with the importance of Rubber Dam as explained by their doctor. The measured p values were insignificant **(**p>0.05 insignificant). 38 patients were ready and willing for Rubber Dam application. 22 patients believed that Rubber Dam must be allowed to be applied (before RCT) only by skilled hands. 4 patients believed that Rubber Dam is very uncomfortable for patients. P value less than 0.05 was considered as significant.

Conclusion: Within the limitations of the study, authors concluded that patients were quite satisfied with the overall perception of rubber dam during RCT. We have also observed some positive and imperative correlations of patient's satisfactions with their demographic details.

Keywords: Rubber Dam, Root Canal Treatment, Satisfaction.

INTRODUCTION

As a proven fact, most of the dental patients generally think of two major concerns when decide a root canal treatment. First is pain and second is time taken to complete the procedure. By definition, dental pain is pain in the teeth or their supporting structures, caused by dental diseases or

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pain referred to the teeth by non-dental diseases.[1] Undoubtedly, pain is the most common reason for which a patient visit to the dentist for treatment. Literature has also shown that there are seven conceptual dimensions of oral health: functional limitation, physical pain, psychological discomfort, physical disability, psychological disability, social disability, and handicap.[2,3] Isolation of the operating site is the integral step in most of the endodontic and other dental procedures. In literal words, rubber dam is a sheet of thin latex rubber used by dentists to isolate a tooth or teeth from the fluids of the mouth during dental treatment. Therefore it must be held in place by a clamp and frame. Rubber dam is considered as the gold standard for root canal treatment solely because of three major factors. 1) infection control 2) patient protection and 3) efficient treatment.[4,5] In terms of endodontics, rubber dam is frequently used during root canal treatments where it prevents the possible/accidental ingress of endodontic instruments, irrigation substances and dental debris. It also increase the treatment efficiency by allowing greater access to the treatment site and helps in retracting the gum, tongue, lips and cheek. Few of the studies have shown that most of the newly-graduated general dentists wrongly presume that rubber dam is the tool which is used only for academic purposes in educational premises.[6] During literature exploration we noticed that only few studies have investigated patient satisfaction with rubber dam in RCT. Nevertheless, analyzing patient satisfaction is one of the popular methods of attracting patient participation in treatment/care and patient dissatisfaction is a major cause of lack of referral or changing the clinician. Keeping all these fact in mind, this study was conducted to evaluate the satisfaction levels with rubber dam in root canal treatment among institutionalized patients in northern Indian region.

MATERIALS & METHODS

This study was planned to be conducted on cross sectional theme wherein it comprised of total 50 institutionalized patients those seeking for RCT. The study was conducted in the department of Conservative Dentistry and Endodontics of the institute. Demographic details were recorded for the patients and attempted to statistically analyze to establish certain authentic correlations. Total 50 patients those visiting for root canal treatments were selected from the routine foot fall of the patients in department OPD. Usages of rubber dam for isolation were ensured for all the studied patients. Patients suffering from any physical or psychological diseases were excluded from the study. The methodology and planned way of study's implementation were explained to the patients. All patients were also informed about the significance and clinical relevance of the study. Written consents were obtained from all 50 willing patients. A preformed questionnaire containing 8 questions about the satisfaction levels with rubber dam during root canal treatment was provided to patients in their last visit of root canal treatments. This study comprised of patients who honestly responded to this questionnaire. We have planned to complete the study using questionnaire for the reason that questionnaire based studies are very useful to obtain comprehensive data about personal and group perceptions and opinions. Additionally, they can be performed concurrently on a larger population to outline their common attitude. The confidentiality and other rights of the participants were completely ensured. Results thus obtained was tabulated and subjected to statistical analysis using chi- square test. The recorded data was subjected to basic statistical tests to attain p values and other inferences. P values less than 0.05 was considered significant ($P<0.05$).

RESULTS

All the studied parameters and records were assembled and sent for statistical analysis using statistical software Statistical Package for the Social Sciences version 21 (IBM Inc., Armonk, New York, USA). The resultant data was subjected to relevant statistical tests to obtain p values and other inferences like Pearson Chi Square values. Table 1 and Graph 1 shows that patients were divided into 6 age groups of 25-30 years, 31-35 years, 36-40 years, 41-45 years, 46-50 ears, >50 years respectively. Minimum number of patients was noticed in first age groups. Maximum patients were belonging to the age group of 36-40 years. Total 8 male and 7 female patents were there in this group (30 % of total subjects). For this group, p value was noticed to be significant **(**$p<0.05$ significant). For rest of the age groups, the measured p values were insignificant **(**$p>0.05$ insignificant). Education &

employment related interpretations have been outlined in table 2. Table 3 shows different responses of questionnaire with their statistical correlations. Only 7 patients have heard about rubber dam application in RCT. P value was found to be significant here. 33 patients were satisfied with the importance of rubber dam as explained by their doctor. The measured p values were insignificant (p>0.05 insignificant). 38 patients were ready and willing for rubber dam application (before RCT). 22 patients believe that rubber dam must be allowed to be applied (before RCT) only by skilled hands. 4 patients believe that rubber dam is very uncomfortable for patients. During response evaluation we also observed that male patients were having more positive outlook for rubber dam as compared to female patients. It showed gender wise predilection towards rubber dam application.

Table 1: Demographic details of the patients [age & gender interpretations].

Age Group	Year Range	Male	Female	Total	P value
1	25-30	1	1	2 [4 %]	0.080
2	31-35	5	2	7 [14 %]	0.500
3	36-40	8	7	15 [30 %]	0.000*
4	41-45	6	4	10 [20 %]	0.090
5	46-50	5	5	10 [20 %]	0.800
6	>50	2	4	6 [12 %]	0.300
Total	-	27	23	50	*Significant

***p<0.05 Significant**

Table 2: Demographic details of the patients [education & employment interpretations]

VARIABLE	CHARACTERISTICS	NO.
Education	Bachelor/ Master Degree	7
	Metric	15
	Uneducated/Others	28
Employment	Govt. Employ	3
	Student	7
	Business	8
	Self-Employed	32

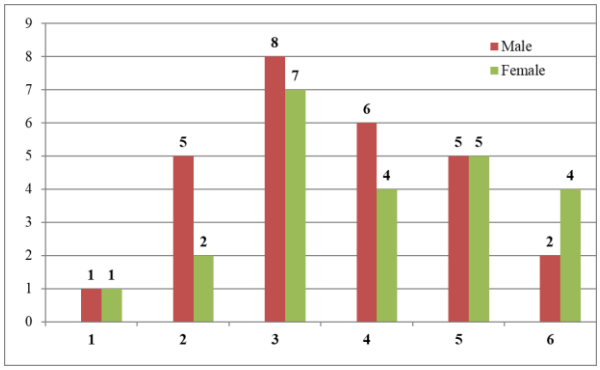
Table 3: Evaluation of questionnaire responses with related statistical correlations.

Questionnaire	Characteristics	No. of Respondents {Yes}	Chi Square Test (Pearson $\chi 2$)	P value
1	Have you ever heard about Rubber Dam before?	7	0.12	0.01*
2	Are satisfied with the significance of Rubber Dam as explained by your doctor?	33	0.56	0.08
3	Was that explanation clear enough to motivate you?	35	0.06	0.16
4	Are you willing for Rubber Dam application (before RCT)?	38	0.85	0.92
5	Have you ever experienced Rubber Dam application (RCT) before?	4	0.34	0.01*

6	Do you believe that it is very uncomfortable for patients?	4	0.31	0.00*
7	Do you think that it must be allowed to be applied (before RCT) only by skilled hands?	22	0.53	0.09
8	Would you like to suggest your friends, relatives for Dam application (before RCT)?	21	0.42	0.7 0

***p<0.05 Significant**

Graph 1: Demographic details of the patients [age & gender interpretations]



DISCUSSION

This study was conducted evaluate the satisfaction levels with rubber dam usage during root canal treatment among institutionalized patients in northern Indian region. We studied the response data of total 50 patients and mostly of them were from adjacent rural areas. The results were quite interesting as most of the patients showed positive outlook. Those who have not heard it before they also wanted to know about rubber dam and its advantages. This positive trend was predominantly noticed in male patients. As we know that usually patients avoid root canal treatment due to nervousness and phobia of pain. All these factors usually result in treatment avoidance and eventual tooth loss by extraction. However it can be handled well by precisely intimating patients regarding pain associated with root canal treatment.[7] It significantly reduces the pain perception and increases pain threshold. As we all are aware that in any hospital/organization/dental teaching school, patient satisfaction is an important factor in evaluating overall grading of quality treatment.[8] In our study only 7 patients have heard about rubber dam application in RCT. P value was found to be significant here. 33 patients were satisfied with the importance of rubber dam as explained by their doctor. 38 patients were ready and willing for rubber dam application (before RCT). 22 patients believe that rubber dam must be allowed to be applied (before RCT) only by skilled hands. 4 patients believe that rubber dam is very uncomfortable for patients. During response evaluation we also observed that male patients were having more positive outlook for rubber dam as compared to female patients. Some of the researchers (Newsome et al, Tuominen et al, Freeman) showed that the factors affecting patient satisfaction generally include social characteristics, relationship between dentist and patient, treatment cost and characteristics of the healthcare system.[9,10,11] Few researchers including Stewardson demonstrated the advantages of using rubber dam and concluded that have been well recognized for both the dentists and patients during root canal treatments. These results were quite comparable to the study results of ours. They also concluded that the usage of rubber dam is correlated with the final outcome of treatment.[12] Filipović in 2004 conducted a study to evaluate patient attitude and effect of clinical factors. In their study authors concluded that majority of patients (69.1%) liked rubber dam application for their successive appointments.[13] They have also showed positive outlook towards it. Furthermore, it was also stated that the patient outlook toward rubber dam would be affected if rubber dam placement did not last long and dentist had sufficient skill. This was a new avenue of investigation wherein clinician's skill was correlated with patient's perspective.

CONCLUSION

Our study results clearly showed the present status of satisfaction about rubber dam in root canal treatment among institutionalized patients in northern Indian region. Within the limitations of the

study, authors concluded that patients were quite satisfied with the overall perception of rubber dam in RCT. We have also noticed positive and imperative correlations of patient's satisfactions with their demographic details. Male patients were more comprehensive for rubber dam than female patients. More than half of the patients were self employed and had their education levels below matriculation. Consequently, endodontists must be regularly counseling the patients regarding the importance of rubber dam in RCT. Nevertheless, we expect some other large scale studies to be conducted that could further set certain standard norms.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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